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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/078,376	02/21/2002	Youne-Sang Lee	P56623	4937

7590 04/04/2007

Robert E. Bushnell
Suite 300
1522 K Street, N.W.
Washington, DC 20005

EXAMINER	
SALTARELLI, DOMINIC D	
ART UNIT	PAPER NUMBER
2623	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/078,376	LEE ET AL.	
	Examiner	Art Unit	
	Dominic D. Saltarelli	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 March 2007*..

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 7, 10, and 17, have been considered but are moot in view of the new grounds of rejection. Prosecution is hereby reopened.

The examiner concedes that there may seem to be an abundance of diverse references used to present the current rejection, however, the underlying nexus of each reference for the combination is the reception and display of HDTV signals. The primary reference, Wugofski teaches a basic system wherein received content is wirelessly rebroadcast from a computer to a television for display. Wugofski is then modified in view of Baggs to support the HDTV format. Each subsequent reference found herein are teachings found in the prior art that a practitioner of ordinary skill would look to in order to implement the system. For example, the HDTV format has been standardized by the FCC, and the HDTV standard transmits video that has been compressed according to the MPEG-2 standard and transmits audio according to the Dolby Digital 5.1 (AC-3) standard, has been coded using Trellis encoding, and is often modulated using either Quadrature Amplitude Modulation or Vestigial Sideband Modulation. Consequently, a receiver adapted to receive HDTV signals would, by necessity, need to incorporate corresponding hardware/software for receiving and processing MPEG-2 video, AC-3 audio, Trellis encoding, and QAM or VSB modulation.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wugofski et al. (5,852,437) [Wugofski] in view of Baggs (US 2002/0164084), Kostreski et al. (5,734,589) [Kostreski], Williams, Jr. et al. (6,175,861, of record) [Williams], Lumelsky et al. (4,949,169) [Lumelsky], Davis et al. (6,449,368) [Davis], Lindemann et al. (2004/0223622, of record), and Reinold et al. (6,175,628) [Reinold].

Regarding claims 1, 3-7, 9, 10, and 12-17, Wugofski discloses a system for reproducing a digital TV signal, comprising:

a computer system (fig. 1) comprising:

a TV tuner card for receiving the TV signal and separating an audio signal and a video signal from the TV signal for output (fig. 1, TV tuner 122);

a wireless module separately modulating each video component and each audio component, combining the modulated signals and wirelessly transmitting the combined signal from a first antenna (fig. 1, transmitter 148 and antenna 152, see col. 4, lines 8-40); and

another antenna and demodulator for receiving the combined signal and outputting recovered video signals to a TV for display (fig. 1, antenna 156 and receiver 160, see col. 4, lines 8-40).

Wugofski fails to disclose the tuner card is digital and receives MPEG-2 video signal, an AC-3 audio decoder for receiving the separated audio signal and outputting 5.1 channel audio; a video decoder for receiving the separated MPEG-2 video signal and outputting an R/G/B video signal; a video signal converter for receiving the R/G/B video signal and outputting a Y/Pb/Pr video signal, said wireless module separately modulating the 5.1 channel audio using different center frequencies, second through seventh antennas and corresponding first through sixth demodulators for receiving the combined signal and outputting recovered 5.1 channel audio to a speaker system, and the display is a digital TV with three demodulators for demodulating the recovered Y/Pb/Pr video signal.

In an analogous art, Baggs teaches it is well known to incorporate digital TV tuner cards into PCs and to display content on digital TVs, taking advantage of the HDTV format for digital video transmission (paragraph 0023-0024).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Wugofski to include the tuner card receives digital TV signals and the TV is a digital TV, as taught by Baggs, for the benefit of allowing a viewer to view HDTV formatted video.

Wugofski and Baggs fail to disclose the tuner card receives MPEG-2 video signals, an AC-3 audio decoder for receiving the separated audio signal and outputting 5.1 channel audio; a video decoder for receiving the separated MPEG-2 video signal and outputting an R/G/B video signal; a video signal converter for receiving the R/G/B video signal and outputting a Y/Pb/Pr video signal, said

wireless module separately modulating the 5.1 channel audio using different center frequencies, second through seventh antennas and corresponding first through sixth demodulators for receiving the combined signal and outputting recovered 5.1 channel audio to a speaker system, and three demodulators for demodulating the recovered Y/Pb/Pr video signal.

In an analogous art, Kostreski teaches transmitting video signals over a network to receivers in MPEG-2 format (col. 19, lines 40-45). MPEG-2 is a standardized and widely utilized compression format for transmitting digital video.

It would have been obvious a the time to a person of ordinary skill in the art to modify the system disclosed by Wugofski and Baggs to include receiving the video signals in MPEG-2 format, as taught by Kostreski, for the benefit of using a standardized and widely utilized compression format for transmitting digital video.

Wugofski, Baggs, and Kostreski fail to disclose an AC-3 audio decoder for receiving the separated audio signal and outputting 5.1 channel audio; a video decoder for receiving the separated MPEG-2 video signal and outputting an R/G/B video signal; a video signal converter for receiving the R/G/B video signal and outputting a Y/Pb/Pr video signal, said wireless module separately modulating the video signal and 5.1 channel audio using different center frequencies, second through seventh antennas and corresponding first through sixth demodulators for receiving the combined signal and outputting recovered

5.1 channel audio to a speaker system, and three demodulators for demodulating the recovered Y/Pb/Pr video signal.

In an analogous art, Williams discloses transmitting video in component format (RGB, in the example given) by outputting a component video signal, modulating each component to a separate frequency, transmitting the multiplexed component signal over a network, and demodulating each component using a separate demodulator to recover the component signal (col. 20 line 37 – col. 21 line 21), providing network compatibility for devices which utilize component video inputs.

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Wugofski, Baggs, and Kostreski to include a video decoder outputting an R/G/B video signal and separately modulating the video signal onto different carrier frequencies for transmission over a network, and three demodulators for demodulating the component video signal, as taught by Williams, for the benefit of providing network compatibility for devices which utilize component video inputs (such as the HDTV display device taught by Baggs).

Wugofski, Baggs, Kostreski, and Williams fail to disclose an AC-3 audio decoder for receiving the separated audio signal and outputting 5.1 channel audio, a video signal converter for receiving the R/G/B video signal and outputting a Y/Pb/Pr video signal, said wireless module separately modulating the 5.1 channel audio using different center frequencies, second through seventh

antennas and corresponding first through sixth demodulators for receiving the combined signal and outputting recovered 5.1 channel audio to a speaker system.

In an analogous art, Lumelsky teaches utilizing a luminance/chrominance format for video signals reduces the bandwidth necessary to transmit a video signal over the RGB format (col. 1, lines 36-50).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Wugofski, Baggs, Kostreski, and Williams to convert the R/G/B signals into a Y/Pb/Pr (the luminance/chrominance equivalent to the R/G/B format in the analog domain) signal, as taught by Lumelsky, for the benefit of reducing the bandwidth needed to transmit the video signal over the network.

Wugofski, Baggs, Kostreski, Williams, and Lumelsky fail to disclose an AC-3 audio decoder for receiving the separated audio signal and outputting 5.1 channel audio, said wireless module separately modulating the 5.1 channel audio using different center frequencies, second through seventh antennas and corresponding first through sixth demodulators for receiving the combined signal and outputting recovered 5.1 channel audio to a speaker system.

In an analogous art, Davis teaches the standardized form of audio coding for HDTV video signals is the AC-3 digital audio coding which employs 5.1 audio channels (col. 1, lines 34-45), necessitating an AC-3 audio decoder for receiving

the separated audio signal and outputting 5.1 channel audio in any receiver adapted to receive HDTV signals in order to decode the audio portion.

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Wugofski, Baggs, Kostreski, Williams, and Lumelsky to include AC-3 audio decoder for receiving the separated audio signal and outputting 5.1 channel audio, as taught by Davis, for the benefit of decoding the audio portion of the received HDTV signal.

Wugofski, Baggs, Kostreski, Williams, Lumelsky, and Davis fail to disclose said wireless module separately modulating the 5.1 channel audio using different center frequencies, second through seventh antennas and corresponding first through sixth demodulators for receiving the combined signal and outputting recovered 5.1 channel audio to a speaker system.

In an analogous art, Lindemann teaches modulation of separate audio channels onto different frequencies for transmission to distributed wireless speakers (each containing a separate antenna and demodulator for received broadcast audio, paragraph 0075), for the benefit of removing the need for wiring to connect the speakers to the audio source (paragraph 0006).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Wugofski, Baggs, Kostreski, Williams, Lumelsky, and Davis to include separately modulating the audio channels using different center frequencies, and corresponding antennas and demodulators for receiving the combined signal and outputting recovered audio channels to a

speaker system, as taught by Lindemann, for the benefit of removing the need for wiring to connect the speakers to the audio source (because Wugofski only teaches wireless distribution of a video signal, and is silent on how the audio portion is transmitted).

Further, Wugofski, Baggs, Kostreski, Williams, Lumelsky, and Davis fail to disclose converting the digital (AC-3 is a digital standard) audio signals into analog audio signals prior to distribution.

In an analogous art, Reinold discloses converting digital audio signals into analog audio signals prior to wireless distribution (col. 2, lines 25-36), for the benefit of backwards compatibility with analog speakers (Reinold teaches conversion of digital signals to the analog domain to support devices that have been designed to receive a different form of input, col. 1, lines 25-37).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Wugofski, Baggs, Kostreski, Williams, Lumelsky, and Davis to convert the digital audio signals into analog audio signals prior to wireless distribution, as taught by Reinold, for the benefit of backwards compatibility of with analog input speakers.

Regarding claims 2, 8, and 11, Wugofski, Baggs, Kostreski, Williams, Lumelsky, Davis, and Reinold disclose the system of claims 1, 7, and 10, wherein the signal dividing means is comprised of a digital TV tuner card include a tuner receive the digital TV signal (Baggs, paragraph 0023), a VSB

demodulating part demodulated a high frequency signal received by the tuner into a VSB analog signal (Kostreski, col. 20, lines 28-46), and a demultiplexer diving the digital signal transformed by the Viterbi decoder into the video signal and the audio signal (each audio and video component is separated for separate modulation, as demonstrated above by Williams and Lindemann).

Wugofski, Baggs, Kostreski, Williams, Lumelsky, Davis, and Reinold fail to disclose a Viterbi decoder transforming the VSB analog signal into a digital signal.

Examiner takes official notice that Viterbi, or Trellis, decoders are notoriously well known in the art for use in decoding HDTV signals, because Trellis coding is the established format for encoding HDTV signals at the broadcast end.

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Wugofski, Baggs, Kostreski, Williams, Lumelsky, Davis, and Reinold to include a Viterbi decoder transforming the VSB analog signal into a digital signal.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dominic D. Saltarelli whose telephone number is (571) 272-7302. The examiner can normally be reached on Monday - Friday 9:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DS

SCOTT E. BELIVEAU
PRIMARY PATENT EXAMINER